

The Industrial Revolution Guided Notes

What do we need to industrialize?

- _____.
- England and Germany have access to both of these resources.

Rubber

- When James Watt invents the _____, he needed another resource to make it run efficiently.
- Rubber is used to make _____ for the machinery.
- Rubber comes from _____.

Great Britain is the first to Industrialize

- Britain: Increased production leads to more
 - _____
 - _____
 - _____
- Jethro Tull
 - Invents the seed drill and horse drawn _____
 - Increases farming production
- Britain also has harbors, canals, and access to the Columbian exchange
 - _____ increases agricultural production

The Enclosure Acts

- The Enclosure Acts
 - Abolition _____ farming system
 - Used for hundreds of years
 - Allows for _____ to be sold to private investors
 - New _____ will be built to get to the new privatized land.

Ingredients for Industry

- Enriched Property owners
 - _____ crops
 - Crop rotation
 - Selective _____
 - Mechanization of planting

- Consequence:
 - _____
 - Needed to Industrialize
 - Tenant farmers were no longer needed due to new technologies.
 - Tenants became cheap reliable work force in factories.
 - People move to _____ to get jobs.

Textile Production

- Traditionally women would get together in one _____ home and make cloth to make clothing for their families.
- This _____ was used for hundreds of years.

Spinning Jenny

- Patented by _____ Hargreaves in 1770
- Process _____ much faster

Waterpower

- Sir Richard _____
 - _____ loom factories
 - Invented the Water Frame mill
 - Water _____ factory

Textile Production Innovations

- Edmund Cartwright:
 - _____: produce cloth and clothing much faster
- The Factory System:
 - _____: industrial output vastly increased
 - _____: allows for machines to be fixed faster and cheaper
 - _____: automatic devices increases industrial output
- Consequences:
 - replaced the domestic system

Steam Engine

- Thomas Savery
 - Credited with the invention of the _____
 - Took ideas from _____, the cylinder and piston system.

- Steam Engine pumped _____ from the ground

Pottery

- Josiah Wedgwood innovated _____ production by introducing division of labor.
 - Each worker had a small _____
 - Increased _____
 - Decreased _____
 - Became the model for mass production in Britain

United States Industrialization

- Eli Whitney: _____
 - Increases cotton production
 - Increases demand for slaves

Communication

- Alexander Graham Bell
 - _____
 - Uses _____ to communicate over long distances

Great Britain Industrialization.

- Henry Bessemer: improved _____.
 - More oxygen makes the iron hotter and allows it to be “cast”.
 - Mass production for railroads
 - Cheaper to produce more steel

Transportation

- George Stephenson builds the _____.
 - Steam _____ on a wagon, out along a set of tracks
 - Train
 - Railroad
 - Some _____ and _____ argue that going 25 mph or more would cause the human organs to shut down leading to death

Transportation Continued

- What is the purpose of railroads?
 - _____: People can live further away from city centers
 - _____: Stimulates the market by opening up new areas to buy and sell goods
 - _____: encourages villages and towns to develop in rural areas
 - _____: politically ties regions and nations together.

Transportation Continued

- United States and Great Britain build _____ and _____.
- Canals: allows _____ of heavy goods to cities. Faster, and cheaper than by horse drawn carts.
- Steamboats: _____ form of transportation up and down rivers

Germany Industrialization

- Started as an _____ and _____ country.
- Germans sent their children to study industrialization in Britain and brought back those ideas to Germany.
- Germans import British _____
- Germans hire British industrial _____
- By the 1850's, Germany had:
 - Textile Factories
 - Iron works
 - Railroads
 - Coal mines

German Industrialization continued

- Germany was a fragmented country.
- Last half of 19th century experienced rapid industrial expansion
- After German _____ 1871, industrialization sped up.

Chemical production

- _____ and _____
 - Production of industrial chemicals increased

German Industrialization Continued

- Electrical and Motor construction
 - _____
 - _____
- At the end of the 19th century, _____ is the biggest industrial producer in _____.

Impacts of Industrialization

- European and American imperialism spreads quickly to Africa and Asia.
- Imperialized:
 - Almost all of _____
 - Southeast _____
 - Coastal regions of _____

Japan Opens Up

- Under _____, Japan was closed off.
- Admiral Matthew _____ forces Japan to enter into economic and diplomatic negotiations with the United States
- This allows the United States compete better against _____ forces

Meiji

- Before opening up, Japan had some legal trade, but a lot more _____.
- Shogun accepted the _____ which opened Japan to U.S. business interests
 - In 1853, Japan had to open its docks to the United States Navy
- In 1864, _____ navies attack Japanese cities (Southwestern coast).
 - Demanded Japan to open up trade to them too.

Meiji Restoration

- Under _____, Japan opens its markets and modernizes
- Japan sees the failures of _____ and the treaty to repel European forces and American forces
- _____ is seen as weak.
- Inspires a rebellion and the Meiji form a new government
 - Claim that the new government is to restore power to the Emperor
 - In reality, Emperor was a figurehead ruled by a small group of _____ (small group of rich business leaders with political power).
- Meiji fear _____ influence may take over Japan
 - Launches initiative to modernize Japan

Japan Modernizing

- Japan needs industry for _____
- Well trained military for national identity
- Adopts western _____
- Sends hundreds of students to study in Britain, America, and Germany.
- Wants to be a modern power just like the other western countries.
- Moves capital from Kyoto to Edo (modern day _____)

Japan Modernizing

- Japan hired experts of all types to come to Japan to teach Japanese _____, military _____, educators, and students.
- New form of _____ focuses on:
 - Vocational Jobs
 - Technical Jobs
 - Agricultural Classes
 - Research Universities
- Japan hires German experts to help them form a modern _____, fashioned after Britain.
- Adopts modern imperial government bureaucracy from Germany.
- Adopts slogan: “Enright the country, strengthen the army” –Fukoku Kyohei

Japan Modernizes

- Modernized infrastructure
 - _____
 - _____
 - _____
- Japanese government set up factories.
 - Produce textiles.
 - Once profitable, the state would sell factories to groups of investors called _____.
 - Profits from selling factories helped to pay for reforms.
- Mitsubishi founder: Yataro Iwasaki